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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,021	04/25/2006	Hiroyuki Kinugawa	1163-0549PUS1	7528
2292 7590 12/14/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER RIDDLE, KYLE M	
			ART UNIT 3748	PAPER NUMBER
			NOTIFICATION DATE 12/14/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

## Office Action Summary

Application No.

10/577,021

Applicant(s)

KINUGAWA ET AL.

Examiner

Kyle M. Riddle

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 8-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-10 and 12-14 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 4/25/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: Page 2, third paragraph, line 1 of the paragraph, "exits" should read --exists--.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 8, 10, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Ogawa (U.S. Patent 6,962,133).

Ogawa discloses a variable valve timing device comprising:

- a first rotor or outer rotor 30 in housing member 3 having a plurality of shoes or convex portions 33 forming advanced angle chambers R1 and retarded angle chambers R2, covers or plates 40, 50, the outer rotor 30 rotating integrally with a crankshaft 110 (column 2, lines 43-58, column 3, lines 43-49, column 4, lines 8-22);

- a second rotor or inner rotor 20 having a plurality of vanes 21 dividing the hydraulic chambers into an advanced angle chamber R1 and a retarded angle chamber R2, the inner rotor

20 relatively rotates with the outer rotor 30 through a predetermined angle, and the inner rotor 20 is integrally fixed to camshaft 10 (column 2, lines 41-53, column 3, lines 43-57);

- an engaging cavity or engaging groove 36 and projection portion 22 provided in the outer rotor 30 (column 4, lines 23-38);

- a lock pin 80 housed in the inner rotor 20 projected therefrom by the energizing force of a coil spring 81, the lock pin 80 abutting the outer rotor from an oblique direction or a point that is decentered relative to the center point of the rotation of the housing member 3 (column 4, lines 34-38, column 5, lines 3-16; Figures 2-4).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9, 12, and 14 are rejected under 35 U.S.C. 103(a) as being obvious over Ogawa.

Ogawa discloses a variable valve timing device comprising a first rotor or outer rotor in housing member having a plurality of shoes or convex portions forming advanced angle chambers and retarded angle chambers, covers or plates the outer rotor rotating integrally with a crankshaft, a second rotor or inner rotor having a plurality of vanes dividing the hydraulic chambers into an advanced angle chamber and a retarded angle chamber, the inner rotor relatively rotates with the outer rotor through a predetermined angle, and the inner rotor is integrally fixed to camshaft, an engaging cavity or engaging groove and projection portion provided in the outer rotor, a lock pin housed in the inner rotor projected therefrom by the

energizing force of a coil spring, the lock pin abutting the outer rotor from an oblique direction or a point that is decentered relative to the center point of the rotation of the housing member. Ogawa, however, fails to specifically disclose the lock pin housed in the vane instead of the outer housing, a tapered tip lock pin, or an oblique engaging groove.

Ogawa do disclose the lock pin housing in the outer rotor 30 with the vanes, and it is well known in the art to house lock pins in either the vanes or shoes of phaser-type valve timing mechanisms, so to house the lock pin in the vane area or inner rotor would be obvious to one of ordinary skill in the art depending on size considerations and structural relationships. It is also well known in the art to have a tapered lock pin to ease the transition of the pin in and out of the groove and therefore obvious to one of ordinary skill. The oblique abutting direction of the invention having the pin contacting from an oblique direction, as disclosed by Ogawa, or accomplishing the same effect by having the engaging cavity designed in an oblique way would be obvious to one of ordinary skill since the same effect is achieved.

#### ***Allowable Subject Matter***

6. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

7. The IDS (PTO-1449) filed on 25 April 2006 has been considered. An initialized copy is attached hereto.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of 3 patents.

- Labita (U.S. Patent 4,483,366) discloses a locking valve with the locking pin mechanism tilted with respect to the receiving hole.

- Todo (U.S. Patent 6,520,132) discloses a locking pin mechanism demonstrating the horizontal forces of a tilted locking pin.

- Lichti (U.S. Patent 6,742,485) discloses a locking pin mechanism demonstrating the horizontal forces of a tilted locking pin.

#### *Communication*

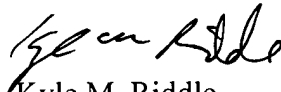
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyle M. Riddle whose telephone number is (571) 272-4864. The examiner can normally be reached on M-F (07:30-5:00) Second Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

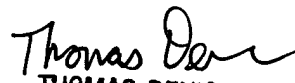
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Kyle M. Riddle  
Examiner  
Art Unit 3748

kmr

  
THOMAS DENION  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700